

proposed amendment to the drawings wherein FIGS. 1, 2a, 2b, 3a and 3b are labeled as prior art. Applicant therefore respectfully requests that the proposed drawing amendment be entered and that this objection be withdrawn.

The Examiner also objected to FIGS. 10, 10a, 10b, 11a and 11b for allegedly not being described in either the brief description of the drawings or the detailed description of the invention. Applicant respectfully submits that FIGS. 10, 10a, 10b, 11a and 11b were cancelled in a proposed amendment to the drawings filed concurrently with Applicant's response (dated January 17, 2002) to the Restriction Requirement mailed on June 5, 2001 and the communication mailed on December 21, 2001.

The Examiner also objected to FIGS. 5, 6, 7, and 8 for allegedly containing reference numbers to elements that are not described in the specification. Applicant has submitted currently herewith under separate cover a proposed amendment to the drawings wherein the objected to reference numbers FIGS. 5, 6, 7 and 8 have been deleted.

Applicant therefore respectfully requests that the proposed drawing amendment be entered and that this objection be withdrawn.

The Examiner also objected to the drawings for failing to disclose various elements recited in the claims. More specifically, the Examiner alleges that the drawings fail to disclose outlet ports in each compartment for backwashing which are located below each upper bed. Applicant respectfully traverses this objection.

In an exemplary embodiment upper bed refers to a bed located in the upper part of the nozzles. For example, when referring to FIGS. 4a, 4b, 4c and 4d the upper beds are identified in the present invention as "Nozzle equipped upper bed 104 and 105 are located at the upper part of this column." (page 11, lines 24-25). Further, Applicant respectfully submits that output ports 111 and 112 which are

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A copy of the proposed amendment to the drawings and Applicant's accompanying response is enclosed as Appendix A for the Examiner's convenience.

used when backwashing are located below upper beds 104 and 105. Applicant therefore respectfully request that this objection be withdrawn.

The Examiner also objected to the drawings for allegedly failing to disclose a lower fluid inlet port in fluidic communication with both the first and second vertical compartments as recited in claim 6. Applicant has amended claim 6 to delete the objected to element. Applicant therefore respectfully requests that this objection be withdrawn.

The Examiner rejected claims 6-11 and 15 under 35 U.S.C. 112, first paragraph as allegedly containing subject matter that was not described in the specification in such a way as to enable one of skill in the art to make and or use the invention. In particular, the Examiner alleges that the specification does not describe an apparatus that has an outlet port for backwashing disposed adjacent to and below each upper bed in each compartment. Applicant respectfully traverses this rejection.

As argued above, the output ports 111 and 112 are located below the nozzle equipped upper beds 104 and 105. For example, referring to Figures 4a, 4b, 4c and 4d "Nozzle equipped upper bed 104 and 105 are located at the upper part of this column." (page 11, lines 24-25). Further, output ports 111 and 112 which are used when backwashing are located below upper beds 104 and 105. Applicant therefore respectfully request that this rejection be withdrawn.

The Examiner rejected claims 6-11 and 15 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner alleges that the recitation of an outlet port for backwashing disposed adjacent to and below each upper bed in each compartment in claim 6 is misdescriptive. Applicant respectfully traverses this rejection. As argued above output ports 111 and 112 which are used during backwashing are located

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below upper beds 104 and 105 as illustrated in FIGS. 4a and 4b. Applicant therefore respectfully requests that this rejection be withdrawn.


It is therefore respectfully submitted that pending claims 6-11 and 15 are in condition for allowance, and an early notice of allowance is respectfully requested.

Attached hereto is a marked-up version of the changes made to the above-identified application by the current amendment. The attached page is captioned "Version with markings to show changes made."

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By

  
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Peter A. Nichols  
Reg. No. 47,822  
626/795-9900

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

6. (Amended Four Times) An apparatus for conducting liquid separation utilizing an ion exchange process, the apparatus comprising:

a liquid separation column, the column comprising a partition within the column dividing the column, into first and second vertical compartments, the vertical compartments being joined at their lower ends to form a U-tube portion between the compartments, wherein the first and second compartments are in fluid communication;

each vertical compartment including an upper fluid inlet port located in the top of the compartment, the inlet ports being in fluid communication with the interior of the compartments and an external fluid source;

each vertical compartment being equipped with an upper bed disposed inside each compartment, the beds being proximate to the upper end of the compartments and below the inlet ports;

the upper beds having fluid distribution nozzles, wherein fluid received from the inlet ports is directed into the compartments at a controlled flow rate;

each compartment further including an outlet port for backwashing, each outlet port being disposed adjacent to and below each upper bed, wherein the outlet ports remove particulate matter larger than the upper bed nozzle openings;

~~[the U-tube portion between the compartments including a lower fluid inlet port, wherein the lower fluid inlet port is in fluid communication with both the first and second vertical compartments,]~~  
and

an ion exchange resin layer disposed within each vertical compartment, wherein a free board is defined between a top level of the ion exchange resin layer and the upper bed in each compartment,

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whereby the free board allows the resin layer to expand and contract during the liquid separation process.

WITNESSED BY \* \* \* \* \*